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**Application No.: 09/770,108**

### **REMARKS**

Claims 1 and 4-27 are presently pending in the subject patent application. Claims 1 and 14 have been amended by the current amendment.

At paragraph 1 of the Office Action, the Examiner objected to claim 1, paragraph (b) since it did not begin with an action to be performed. While there is no statutory or judicial authority for the objection, Claim 1 is amended in response nonetheless to further prosecution.

### **35 USC 112 Rejection**

At paragraph 2 of the Office Action, the Examiner rejected claims 8, 9 and 10 to 21 under 35 USC 112, second paragraph. With respect to claims 8 and 9, the Examiner submitted that the term "liquidity destination" was vague in that it was not clear what constituted "liquidity". The Applicant points out that the words used in the claims should not be interpreted in isolation, but must be interpreted in accordance with the usage of those words in the remainder of the specification. The recited term "liquidity destination" is defined at page 1, lines 18 to 21 of the subject patent application. Accordingly, the Applicant submits that the Examiner conclusion via said term is incorrect and should be withdrawn.

With respect to claims 10 to 21, the Examiner submitted that the term "system" was vague since it could cover different statutory classes of invention. The

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Applicant points out that the body of a claim, not the title, defines the ambit of the claim. As the identified claims recite apparatus means, as opposed to method steps, the statutory class of invention identified by the Examiner is correct.

### **35 USC 103(a) Rejection**

At paragraph 4 of the Office Action, the Examiner rejected the invention recited in claims 1 and 4 to 27 under 35 USC 103(a) for being unpatentable over Hartman (US 5,960,411) in view of Lupien (US 6,421,669).

For the reasons set out below, the Applicant submits that the Examiner failed to make out the requisite *prima facie* case of obviousness to properly reject claim 1, and claims 4 to 27 under 35 USC 103(a). Accordingly, the Applicant submits that the Examiner's claim rejection to the claims under 35 USC 103(a) should be withdrawn.

### **Obviousness Generally**

In order for a claimed invention to be rejected under 35 U.S.C. 103(a) based on a modification to a cited reference, there must be some motivation or suggestion in the prior art for the modification. As the Court of Appeals for the Federal Circuit held in *In re: Gordon* (221 USPQ 1125, 1127 (CAFC. 1984), the mere fact that the prior art could be modified to arrive at the inventor's invention would not have

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made the invention obvious unless the prior art suggested the desirability of the invention. If the suggested modification rendered the prior art reference inoperable for its intended purpose, the prior art reference would not suggest the desirability of the invention.

Further, as the Court of Appeals for the Federal Circuit articulated in *Re Sang-Su Lee* 00-1158, Serial No. 07/631,240, January 18, 2002, there must be some concrete evidence in the record for the motivation or suggestion. Mere conclusory statements on the part of the Examiner concerning motivation or suggestion are improper. The Court reasoned:

"The 'common knowledge and common sense' on which the Board relied in rejecting Lee's application are not the specialized knowledge and expertise contemplated by the Administrative Procedure Act. Conclusory statements such as those here provided do not fulfill the agency's obligation. This court explained in *Zurko*, 258 F.3d at 1385, 59 USPQ2d at 1697, that 'deficiencies of the cited references cannot be remedied by the Board's general conclusions about what is 'basic knowledge' or 'common sense'.

[...]

The examiner's conclusory statements ... do not adequately address the issue of motivation to combine. The factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." *W.L. Gore v. Garlock, Inc.*, 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983). Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion."

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As the Applicant will explain, the art cited by the Examiner does not suggest the solution claimed herein. Further, the Examiner did not produce any evidence of motivation for the solution claimed herein. Accordingly, the invention recited in claim 1, and claims 4 to 27 is not obvious in view of the cited art.

Method of Matching Orders (claim 1; claims 4 to 9)

Independent claim 1 of the subject patent application recites a method of matching orders.

The Examiner submitted that apart from the use of an evaluation heuristic, Hartman disclosed a method of order matching, comprising steps (a), (b), (c) and (d) above. The Examiner also argued that it would have been obvious to combine the teachings of Hartman with the teachings of Lupien since Lupien teaches that heuristics allow for maximization of joint satisfaction of all participants. The Applicant disagrees with both of these conclusions.

Hartman (US 5,960,411)

Hartman discloses a method of placing purchase orders via a communications network. In one embodiment, a server assigns a unique identifier to the client purchaser, and sends the identifier to the client purchaser when the purchaser first

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interacts with the server. The server then transmits a web page to the client purchaser identifying an item for sale. If the purchaser client selects the buy button on the web page, the server requests purchaser-specific order information from the purchaser client (e.g. customer name, shipping address, credit card information; see column 7, lines 10 to 14), and then stores the purchaser-specific purchase information together with the purchaser's unique identifier. The server then completes the order by adding the purchaser-specific purchase information to the item order information (e.g. product identifier and quantity) (column 3, lines 60 to 64).

Contrary to the assertion in paragraph 4 of the Office Action, Hartman does not disclose that the purchaser client transmits to the server time information identifying when the order should be shipped. The passage of the patent referenced by the Examiner (column 4, lines 45 to 58), only states that after an order is placed, the server provides the purchaser client with only enough information to allow the purchaser to determine that the server has correctly identified the purchaser, but not enough information that could be useful to an unscrupulous interceptor. The referenced passage also states that the server allows the purchaser to verify the accuracy of the purchaser-specific purchase information, such as shipping address, after presenting the purchaser client with a login web page that verifies the identity of the purchaser. However, the referenced passage does not state the purchaser

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client transmits time information to the server identifying the time instant when the order should be shipped, that such time instant information was a component of a legally-binding transaction, or that the server receives such time information, as required by claim 1, paragraph (a).

Also, contrary to the Examiner's assertion, Hartman does not disclose that the server transmits, over a communications network, to the transaction destination, order information at the time instant identified by the time information (which was received as part of the order). The passage of the patent referenced by the Examiner (column 4, lines 59 to 61), only states that when the purchaser selects the single-action ordering button, the purchaser client sends a message to the server requesting that the displayed item be ordered. However, this passage does not state that at the time instant identified by the time information (transmitted to the server as part of the order), the server transmits an order message over a communications network to the transaction destination, as required by claim 1, paragraph (b). At column 4, lines 61 to 64, Hartman does state that the server provides the purchaser client with a web page confirming the details of the order. However, this latter passage fails to state that the web page is presented to the transaction destination, and also fails to state that the web page is presented at the time instant identified by the time information (which was transmitted to the server as part of the order).

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Not only does not Hartman not disclose that the server transmits an order message over a communications network at the time instant specified by the purchaser client, but at column 8, lines 1 to 45 of the patent Hartman discloses that the server (not the purchaser client) determines when orders should be shipped. In this latter passage, Hartman discloses that, using a shipping algorithm, the server combines orders together that are intended for the same destination, in an attempt to reduce shipping costs. The scheduling algorithm has two stages. In the first stage, the algorithm schedules for shipment orders that are completely filled and are intended for the same shipping destination. In the second stage, the algorithm schedules for shipment unfilled or partially filled orders that are intended for the same shipping destination, in accordance with the expected time that such orders would be filled. However, nowhere in the discussion of the scheduling algorithm does Hartman disclose that the purchaser client could specify the time instant when an order should be filled or shipped or that such (non-existent) time instant information would be used to initiate/conclude a transaction, or that the server transmits an order message to the transaction destination at the time instant specified by the order, as required by claim 1, paragraphs (a) and (b).

Further, contrary to the Examiner's assertion, Hartman does not disclose that the server receives over a communications network a completion message identifying a completion status of the order at the transaction destination. The

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passage of the patent referenced by the Examiner (column 4, lines 62 to 67), only states that after an order is placed, the server provides the purchaser client with a web page that confirms that the server received the order. The referenced passage does not state the server receives from the transaction destination confirmation that the requested order was filled or rejected, as required by claim 1, paragraph (c).

The Examiner's conclusion of the relevance of Hartman appears to have been based on an incorrect analogy of Hartman's disclosure to the terms "time instant", "transaction destination" and "completion status", as recited in claim 1 of the subject patent application. With respect to claim 1, paragraph (a), the Examiner stated that Hartman discloses that the step of receiving an order definition identifying at least one transaction instance, each said transaction instance identifying an order, a transaction destination and a time instant for the order with the transaction destination. Hartman does not disclose that the purchaser client or the server receives, as part of an order, any time instant information. Although the operator of the purchaser client may input an order into the purchaser client at an instant in time, and the server may receive such an order from the purchaser client at an instant in time, Hartman does not allow the purchaser to input any time information with the order. Also, since the server, not the purchaser, determines when orders are to be shipped, Hartman would not have any need for any time information from the purchaser. Consequently, the analogy of the "time instant"



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information required by claim 1, paragraph (a) with the instant in time that Hartman transmits/receives an order is incorrect.

With respect to claim 1, paragraph (b), the Office Action states that Hartman discloses the step of transmitting an order message (including price and quantity) over a communications network at the time instant associated with the one of the transaction instances. Claim 1, paragraph (b) is not so limited, but instead states that an order message is transmitted to the transaction destination, and that the order, the transaction destination, and the time instant for the order at the transaction destination is determined by an evaluation heuristic. As discussed above, Hartman does not disclose that the server transmits an order message to the transaction destination specified by the purchaser, or that the server transmits any order message at the time instant specified by the purchaser. Although the server transmits an order confirmation message to the purchaser client, the transaction destination in Hartman would not be the purchaser client, but would instead be the physical shipping address for the item ordered by the purchaser.

It appears that the Examiner analogized the transaction destination, as recited in claim 1, paragraphs (b) and (c), with the server in Hartman, since in the passage referenced by the Examiner (column 4, lines 59 to 61), Hartman discloses that the purchaser client transmits the order information to the server. However, this analogy is incorrect since claim 1 requires the same entity that transmitted the

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order information to receive a completion message identifying a completion status of the order, and that the order is completed at the transaction destination. Although Hartman discloses at column 4, lines 62 to 67 that the server provides the purchaser client with a web page that confirms that the server received the order, Hartman does not disclose that the server provides the purchaser client with a web page confirming that the order was completed (ie the item was shipped). Further, the purchaser would not specify that the shipping destination for the order was the server (i.e. the transaction was completed at the server), since the purchaser would obviously never receive the item purchased. Consequently, the Examiner's analogy of the "transaction destination" information and the "completion status" information required by claim 1 with Hartman's method would be incorrect.

Summarizing the foregoing, Hartman discloses that after an order is placed, the server provides the purchaser client with only enough information to allow the purchaser to determine that the server has correctly identified the purchaser. Hartman does not disclose that the purchaser client transmits time information to the server identifying the time instant when the order should be shipped, or that the server receives such time information, as required by claim 1, paragraph (a). Hartman discloses that when the purchaser selects the single-action ordering button, the purchaser client sends a message to the server requesting that the displayed item be ordered. Hartman does not disclose that at the time instant

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identified by the time information (received by the server as part of the order definition), the server transmits an order message over a communications network to the transaction destination, as required by claim 1, paragraph (b). Hartman discloses that after an order is placed, the server provides the purchaser client with a web page that confirms that the server received the order. Hartman does not disclose that the server receives from the transaction destination confirmation that the requested order was completed, as required by claim 1, paragraph (c). Consequently, the Examiner's conclusion that, apart from the use of an evaluation heuristic, Hartman discloses a method of order matching, comprising steps (a), (b), (c) and (d) of independent claim 1, is incorrect.

**No Suggestion or Motivation to Modify Hartman in view of Lupien**

For the Examiner to maintain a *prima facie* obviousness rejection of the invention recited in claim 1, and claim 4 to 9 of the subject patent application, the Examiner must demonstrate that the prior art suggests the desirability of modifying Hartman to allow the purchaser client to transmit time information to the server identifying the time instant when the order should be shipped. The Examiner must demonstrate that the prior art suggests the desirability of modifying Hartman to allow the server to transmit, at the time instant specified in the order definition, an order message over a communications network to the

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transaction destination specified in the order definition. The Examiner must also demonstrate that the prior art suggests the desirability of modifying Hartman to allow the server to receive from the transaction destination confirmation that the requested order was completed. Alternately, the Examiner must provide evidence that a person of ordinary skill would be motivated by the prior art to make the aforementioned modifications. The Applicant submits that the Examiner has failed to identify the requisite suggestion or motivation for these modifications.

Lupien (US 6,421,669) discloses a method and system for matching buy and sell orders based upon a satisfaction density profile that represents a degree of satisfaction to trade a particular instrument at various combinations of price and quantity. Once a trader has defined a satisfaction density profile, each trader transmits the profile to a common central matching controller. The central matching controller calculates, for each buyer/seller pair, a mutual satisfaction cross-product profile that represents the degree to which that buyer/seller pair can satisfy each other at each grid value of price and quantity. The cross-product profile grid values are ranked in order, and the buy/sell orders represented by the cross-product grid value are then matched. (see column 4, lines 24 to 46).

As shown in Fig. 2 of the patent, Lupien allows traders to define an order with the satisfaction density profile by inputting the ticker symbol for the instrument to be traded, the price and quantity dimensions for the trade, a

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satisfaction contour for the price and quantity dimensions, and a time-in-force indicator that indicates the period of time for which the defined order should remain valid (see column 7, line 15 to column 8, line 4). A sample satisfaction density profile is depicted in Fig. 3a. As described at column 8, lines 16 to 34 of the patent, the vertical axis represents price, the horizontal axis represents quantity, and each contour represents a locus of price/quantity pairs having a specified satisfaction density.

As seen in Fig. 2, Lupien does not allow the trader to input the transaction destination for each respective price/quantity pair. Rather, Lupien requires all of the traders to transmit their satisfaction density profile to a common central matching controller. Further, as shown in Fig. 2 and Fig. 3a, since the time-in-force indicator is applicable to the entire locus of price/quantity pairs, Lupien does not allow the trader to specify a time instant for each respective price/quantity pair. Lupien makes no suggestion of allowing traders to specify a transaction destination for each price/quantity pair, or to specify for each price/quantity pair a time instant at which the associated price/quantity pair should be active.

The Applicant notes that, at page 4, second paragraph, the Examiner stated:

It would have been obvious to one with ordinary skill in the art to include order definition with an evaluation heuristic to Hartman et al because of what is taught by Lupien et al. Lupien et al teaches that using heuristics allows for maximization of joint satisfaction of all participants.

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However, the Applicant submits that the Examiner's submission via motivation does not address the salient points, namely whether a person of ordinary skill would be motivated to modify Hartman to allow (1) the purchaser client to transmit time information to the server identifying the time instant when the order should be shipped; (2) the server to transmit, at the time instant specified in the order definition, an order message over a communications network to the transaction destination specified in the order definition; and (3) the server to receive from the transaction destination confirmation that the requested order was completed.

Although the Examiner asserted that it would have been obvious to include "order definition with an evaluation heuristic to Hartman" since Lupien teaches "using heuristics allows for maximization of joint satisfaction of all participants", the Applicant notes that none of the prior art references cited by the Examiner actually suggests the desirability of such a combination of references. Consequently, the Examiner's conclusion fails to satisfy the evidentiary requirements set out by the Court of Appeals for the Federal Circuit in *Re Sang-Su Lee*.

Also, as discussed above, Hartman discloses that the server uses a scheduling algorithm to combine orders together that are intended for the same destination, in an attempt to reduce shipping costs. If Hartman was modified to allow the

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purchaser client to determine when orders should be shipped, obviously the goal of reducing shipping costs would be jeopardized. The person of ordinary skill would not be motivated to modify Hartman by including an evaluation heuristic with the order definition, since such a modification would render Hartman useless for the purpose intended.

Further, in the claimed invention, the entity that receives the order definition transmits orders (based on the received order definitions) to multiple liquidity destinations (e.g. stock or currency exchanges) which, in turn, negotiate completion of the orders between multiple buyers and sellers. In contrast, in Hartman, the server is the sole vendor, and arranges for delivery of vendable product to multiple delivery destinations. Lupien would not motivate the person of ordinary skill to modify Hartman such that the server, instead of arranging for delivery of product, would instead place orders with multiple liquidity destinations, since Lupien requires requires all of the traders to transmit their satisfaction density profile to a common central matching controller. Also, the definition of "liquidity destination", as set forth in the subject patent application, implies competition for a limited supply of product (good or service). Lupien would not motivate the person of ordinary skill to make the aforementioned modification to Hartman since the resulting competition for the ordered product would remove certainty from the transaction, in that the purchaser client would have no guarantee that it would

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receive the ordered product. As such, Lupien would not provide any motivation for the aforementioned modifications to Hartman.

Since none of the prior art references cited by the Examiner suggests modifying Hartman with the teaching of Lupien, the Applicant submits that the Examiner could only have obtained the requisite motivation from the Applicant's own disclosure. However, as the Court of Appeals for the Federal Circuit reiterated in *re Rouffet* 47 USPQ2d 1453, 1457 (Fed. Cir. 1998), an Applicant's disclosure must not be used as the source for motivation under 35 USC 103(a):

As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); *see also Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements.") Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blue-print for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerosonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

Rather, as the Court of Appeals for the Federal Circuit held in *re Gordon*, 221 USPQ 1125, 1127 (CAFC. 1984), the appropriate inquiry under 35 USC 103(a) is whether the prior art would have suggested the desirability of the invention.



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Since there is no evidence indicating that a person of ordinary skill would be motivated by Lupien to make the foregoing modifications to Hartman, and since such a modification would render Hartman useless for the purpose intended, the Office Action failed to establish a *prima facie* obviousness rejection of the invention recited in claim 1 of the subject patent application.

Since claims 4 to 9 depend from independent claim 1, the foregoing submissions apply equally to the invention recited in claims 4 to 9. Therefore, the Applicant requests that the Examiner's rejection to claims 1 and 4 to 9 under 35 USC 103(a) be withdrawn.

Computer-based Order Matching System (claims 10 to 15)

Independent claim 10 of the subject patent application recites a computer-based order matching system. Independent claim 10 is an apparatus corollary of independent claim 1. Accordingly, the foregoing submissions apply equally to claim 10. Therefore, the Applicant submits that a *prima facie* case for the obviousness rejection of claim 9 is improper, and is respectfully traversed.

Since claims 11 to 15 depend from independent claim 10, the foregoing submissions apply equally to the invention recited in claims 11 to 15. Therefore, the Applicant requests that the Examiner's rejection to claims 10 to 15 under 35 USC 103(a) be withdrawn.

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**Computer-based Order Matching System (claims 16 to 21)**

Independent claim 16 of the subject patent application recites a computer-based order matching system. Independent claim 16 is an apparatus corollary of independent claim 1. Accordingly, the foregoing submissions apply equally to claim 16. Therefore, the Applicant submits that a *prima facie* case for the obviousness rejection of claim 16 is improper, and is respectfully traversed.

Since claims 17 to 21 depend from independent claim 16, the foregoing submissions apply equally to the invention recited in claims 17 to 21. Therefore, the Applicant requests that the Examiner's rejection to claims 16 to 21 under 35 USC 103(a) be withdrawn.

**Computer-Readable Medium (claims 22 to 27)**

Independent claim 22 of the subject patent application recites a computer-readable medium including processing instructions which cause a computer to perform the method steps of independent claim 1. Accordingly, the submissions made for independent claim 1 apply equally to claim 22. Therefore, the Applicant submits that a *prima facie* case for the obviousness rejection of claim 22 is improper, and is respectfully traversed.

Since claims 23 to 27 depend from independent claim 22, the foregoing


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submissions apply equally to the invention recited in claims 23 to 27. Therefore, the Applicant requests that the Examiner's rejection to claims 23 to 27 under 35 USC 103(a) be withdrawn.

For the above reasons, Applicant respectfully submits that the presently claimed invention is patentable over the prior art. Reconsideration and allowance of the claims is respectfully requested.

Respectfully submitted,

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